

November – March **Action required by (Public Works, Arborist Contractors)**

➤ Clip and Destroy Accessible Webs Manually Using the BTM infestation inventory: \$20k. (Public Works, Arborist Contractors)

As many nesting webs as possible should be removed from both public and private property in the winter. This is the best way of knocking back the BTM population with minimal chemical burden on the city due to insecticides. Trees to be particularly targeted are the following

- Trees with edible fruits
- Flowering trees
- Trees with easily accessible nests not requiring a bucket truck etc.
- Additionally, priority should be given to trees on public lands and public right of ways, particularly in high traffic or highly visible areas.

➤ Plan Spring Insecticide Treatment: (Public Works, Arborist Contractors)

As arborists move through the city eliminating as many nests as can be removed from trees by hand as possible, they should be making note of which trees should be treated with pesticide injections versus sprays, and what sort of sprays, (organic vs, conventional, canopy vs. base spray etc.) should be used so that a geospatially resolved spring insecticide treatment timeline can be fully developed by late February at the latest. A short document providing for express written consent to treat private properties with various chemical treatments should be developed during this time, and consent from private property owners should be secured well in advance of the treatments in the spring.

Late March – April: **Action required by Public Works, Arborist Contractors**

➤ Tree insecticide systemic tree implants and injections of trees with inaccessible webs. (Public Works, Arborist Contractors)

The city will make greatest use of tree implants and injection possible to limit the amount of spray insecticide necessary later in the spring.

This should be particularly focused on:

- Prized tree specimens,
- Mature non-flowering ornamental trees (oaks etc.),
- Trees that have inaccessible canopy nests,
- Trees with especially heavy infestations,
- Other instances deemed appropriate by a licensed expert.

It needs to be determined by public works which trees they should contract for injections and which ones will be covered by inserts in house by public works employees.

Arborist contractors:

insecticide injections (limited scope outlined above)

Public works employees:

insecticide inserts (as broadly utilized as applicable)

- Use on public and private property (with permission).
The more thorough and comprehensive the treatment regime, the more effective it will be and hopefully the less will be needed in subsequent years. Priority should be given to trees with the greatest infestations, and to prized specimens.

April – May Action required by Arborist Contractors

- Use base and canopy sprays (public / private).
What affected trees were not covered by manual nest removal or tree injection need to be identified for spray treatment.
- Use of organics like Spinosad / BT kurstaki.
Organic sprays should be used in all areas where there is a reasonable possibility of human exposure or exposure to edible garden plants.
 - Spinosad and permethrin are the most common choices.
 - BT kurstaki (other variants ineffective) in sensitive areas IF APPLIED EARLY
 - Spray reduces but does not eliminate problem
 - Double applications probably more effective – manual removal and injections are also crucial.
- Adhere to state DEP regulations around use of sprays near waterways.
There are significant state regulations around the usage of various pesticides near waterways that lead to the ocean. The regulations around organic insecticides are far less stringent than those governing conventional insecticides, adding another layer of appeal to organic and injectible treatments.
- Use Personal Protection Precautions.

May – June Action required by Public Works and City Council

- Based upon reports from public works of the efficacy of treatment and the projected needs for the coming budget year the council should allocate appropriate funds for the coming fiscal year.

June – July Action required by Public Works etc. to communicate to public.

- Use Personal Protection Precautions.
- Removal of accessible pupae with HEPA system.
Pupae can be vacuumed up if it is done with the correct personal protective equipment and with the use of a vacuum that has a robust HEPA filter on it to prevent dispersion of the toxic hairs. BTM make their cocoons in leaves, on branches, buildings, under eaves and boats, etc.
- Assess municipal budgetary need for coming year.